

Human Ethology Newsletter

1978

#20

Editor Cheryl Travis Dept. of Psychology

Univ. of Tenn. Knoxville, Tenn. 37916

WHAT'S IN A NAME?

Tabulation of mail ballots on the names suggested for our organization in the October newsletter indicated that the preferred title is Society for Human Ethology. Several people indicated that they would indeed like to see "International" affixed to this title, and I agree. However, the final disposition of that possibility will have to be determined by the steering committee.

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NOMINATION OF OFFICERS

During the business meeting held in 1977 (in conjunction with the ABS meeting) a steering committee was elected to concern itself with the nuts and bolts of establishing a formal organization. The names of the committee were reported in the October newsletter, and are listed again for your convenience here. The only way to develop a truly cohesive organization that has a clear identity is for its members to communicate with one another. I suggest that if you have any thoughts about the future of the organization, its structure, goals, meetings, purpose, etc., that you express your opinions to at least one of the people listed here. If you desire a larger audience, I will be happy to oblige you if at all possible by including your comments in a future newsletter.

- Glen King, Anthropology Program, Monmouth College, W. Long Branch, N.J. 07764
- Robert Marvin, Dept. of Psychology, Univ. of Virginia, Charlottesville, VA. 22901
- Fred Strayer, University of Montréal, Montreal, Quebec, Canada
- Larry Stettner, Dept. of Psychology, Wayne State University, Detroit, Mich. 48202
- Gail Zivin, Annenberg School of Communication, Univ. of Pennsylvania, Philadelphia, PA. 19174
- Cheryl Travis, Dept. of Psychology, Univ. of Tennessee, Knoxville, TN 37916

ABS MEMBERSHIP

As was reported in H-E-N #18, the human ethologists at the national ABS meeting voted to merge with ABS. There were several reasons for this decision. ABS had agreed to serve as a foster parent for the human ethology meetings only for a limited time; it was clear that we would not be allowed to hold our meetings in conjunction with theirs indefinitely. We were benefiting without charge from the work of their executive officers, and we were allotted our own meeting room and listing of abstracts in the program, again without charge. There was also considerable feeling that the human ethologists would benefit from interaction with other animal researchers if paper sessions were more integrated. You are encouraged to join ABS; it is a simple procedure. The cost is \$25.00 for regular membership and \$15.00 for student membership. Members receive the ABS newsletter and the journal published by the society, Animal Behaviour. Send your checks to Ben Beck, Secretary of ABS, Curator of Research, Brookfield Zoo, Chicago, Ill 60513.

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INSTITUTIONAL RACISM

A predoctoral and postdoctoral training program for research on Institutional (and other) Racism has been approved and funded by the National Institute of Mental Health.

The objective is to train investigators for research in three main areas: Racism as it functions in formal organizations, the socio-political, scientific, and intellectual foundations of Racism (e.g., the widespread misuse of scientific concepts and especially of the concepts of heredity in Behavior Genetics and in Sociobiology), and the social psychological effects of Institution (and other) Racism on members of dominant groups, as well as cross-cultural dimensions of Racism. Graduates should be able to enter research careers in academic departments, government and private agencies, or as consultants to agencies, institutions, and communities.

The program emphasizes research training in anthropology; behavior genetics; business administration; the administration, history, and sociology of education; linguistics; mental testing; political science; psychology; social work; and sociology. A diversity of courses, seminars, and research programs is available.

PREDOCTORAL TRAINEESHIPS. Predoctoral trainees include students seeking doctorates in anthropology, biology, education, linguistics, political science, psychology, social work, or sociology, with a minor in (an) other discipline(s). Students who have completed two or more years of graduate work may apply for a National Research Service Award. Applications will be evaluated for proficiency in graduate work, the understanding of the fundamentals of relevant science, and signs of aptitude for research. Traineeships provide \$3,900 per year in stipends, plus tuition and fees.

POSTDOCTORAL TRAINEESHIPS. Postdoctoral trainees must have received a Ph.D. or equivalent degree. A strong research background in the social or biological sciences is expected, together with an interest in research on Racism. Applications will be evaluated for doctoral training background and also on proposals (germane to the problems of racism) to be submitted both for doing research and for acquiring further training to increase research competence. Stipends are from \$10,000 to \$14,000 per year, depending on experience.

All traineeships are subject to the usual regulations governing National Research Service Awards such as citizenship status, length of support, and payback agreement.

Interested individuals should write to Jerry Hirsch, Institutional Racism Program, Psychology Department, University of Illinois, Champaign, IL 61820.

NEW BOOKS

D. R. Omark, D. G. Freedman, & F. Strayer (Eds.) *Dominance Relations: Ethological Perspectives on Human Conflict*. New York City, Garland Publishing Company, in press.

Although the book is not yet off the press, I asked Don Omark to provide a few comments, because the topic meshed with the Forum of this edition of the newsletter.

While the focus of the book is on dominance relations between individuals and within groups, the significance of other relationships is also valued, e.g., affiliative, cooperative, courtship, etc. Within the realm of dominance relations, the editors felt that distinctions between perceived status and actual status were important. In fact, children often skew reality in their own favor. This process of skewing reality may be very important for the process of a) entering groups and b) taking over leadership roles in groups when such roles become vacant. This difference between what children (and adults) do as observable phenomena and what they say about their umwelt needs to be further investigated by ethologists. Language has to be explored both in its own right and also in terms of what it can reveal about motivations, cognitive processing, etc. These areas are further elaborated in the book. Gail Zivin and Irwin Bernstein both have chapters in the book and also contributed to the Forum in this newsletter.

NEW JOURNALS

THE BEHAVIORAL AND BRAIN SCIENCES, an unusual journal beginning publication in March 1978, is designed to be eclectic and , to provide in print the exciting give and take found only during face to face meetings at scientific conferences. BBS will publish papers written in clear, jargon-free language together with commentaries from fifteen, twenty, or more of the author's peers from across the BBS disciplines. The author will have an opportunity to respond to the commentary on his work before the entire "treatment" is published.

The BBS concept is based on the knowledge that psycholinguists and animal learning specialists, learning theorists and behavioral biologists, social psychologists and neurobiologists, information scientists and philosophers, all have something to say to and learn from each other's work.

The journal will treat such topics as ... Absolute timing of mental activities/Animal awareness/Categorical perception/Computational neurolinguistics/Cortical longaxon cells and putative interneurons during the sleep-waking cycle/Current issues in the philosophy of mind/Distribution of brain function during mental activity/How neurons retain their past history: 'ionic' versus 'molecular'/Human ethology/Neurobiology of animal sound communication/On consciousness/On the biological basis of human laterality/Serial order in behavior/Sensory cortex of the mind-brain problem

For more information contact the editor, Stevan Harnad, The Behavioral and Brain Sciences, P.O. Box 777, Princeton, N.J. 08540

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COLLEAGUES AND COLLABORATORS

Carol Barner-Barry is a member of the government department at Lehigh University, Bethlehem, Pennsylvania 18015. Her training has been in political science, and some of her thoughts on authority structures in comparison to dominance structures are presented in the forum section. She has also recently authored a book with her husband, Donald Barry, entitled Contemporary Soviet Politics. She has briefly outlined her interests below, and anticipates that some human ethologists will initiate further correspondence.

I am primarily interested in naturally occurring behaviors and structures of dominance and leadership as they relate to the empirical study of the concepts of power and authority. My main focus is on authority.

Currently, I am engaged in the analysis of observational data on authoritative behavior among preschool children. Methodologically, I am interested in the application of social network analysis to the study of structures of authority relationships. I am also trying to develop a typology of authoritative behaviors and an instrument which could be used to identify children with high levels of skill in exercising authority. The findings of human ethologists and the use of naturalistic observation as it is normally used by ethologists is important here, because the exercise of authority among preschool children is highly dependent on nonverbal signaling. The concept of attention structure also seems relevant.

My goal is to relate empirical findings on power and authority to theories of power and authority in order to develop an empirically-based theory of the nature of authority and the relationship between power and authority.

Don Omark informs me that his new address is: Bilingual/Bicultural Education, 140 Education, University of Illinois, Urbana, ILL. 61801

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THE HUMAN ETHOLOGY NEWSLETTER

The newsletter is published quarterly, Jan., March, June, and October. Subscription price is \$3.00 per calendar year. Please send your subscription to Cheryl Travis. Also send your opinions, remarks, theories, and summaries of recent books, papers, etc. that you would like to appear in the newsletter. When you send a subscription please be sure to include a complete mailing address. I have on more than one occasion received a check or money with only a name and the city of origin of the bank.

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FORUM

The Forum section of the newsletter has been instituted for the purpose of stimulating discussion, criticism, and hence a better understanding of the problems addressed by ethologists. Anyone wishing to express a critical review of a particular concept, methodology, or theory is encouraged to submit a short (under 2000 words) paper to the editor.

This quarter the Forum topic is dominance. Several individuals were specifically solicited for their remarks on this topic. The authors work in diverse areas and have equally diverse backgrounds, zoology, psychology, and political science. The paper by I. Bernstein established the criteria by which researchers may determine the usefulness to the term; G. Zivin's paper points to the diverse definitions and lack of consistency of same in contemporary research. Barner-Barry's paper (much shortened here) discusses the separate, but related, phenomenon of authority.

G. Middendorff suggests that the diversity of dominance structures is not a problem if ecological parameters are specified.

Dominance: A Relationship
Irwin Bernstein
Dept. of Psychology
University of Georgia

Unless the use of the dominance concept adds something new to our understanding of behavior, it is worthless verbal baggage. If it means only the "winner" of an encounter, why not talk of winners and losers? If it means being generally submissive or aggressive, then what value is dominance as a synonym? If we mean some kind of competitive ability, why not call it that? If we can predict nothing new by inventing this intervening variable, then we have accomplished little more than the cluttering of our vocabulary. Jargon for its own sake is not science.

If dominance exists we should remember that it will have structure, immediate causes, functions, ontogeny, and an evolutionary history. These five views (Tinbergen) must not be confused. Each is a reasonable subject for study by students of biology and behavior. What is the structure of dominance? Alas, it is not directly observable. Dominance is a term referring to the relationship between two individuals. As such, it influences many types of social interactions, but it is not revealed as a single motor pattern or even a cluster of patterns. To the extent, however, that we can predict the nature of social interactions based on a knowledge of dominance relationships, it will be a useful concept.

If two individuals meet and fight until one flees or submits, we have a clear case of an agonistic encounter involving aggression and submission, and a winner and a loser. If the outcome was attaining a contested goal we can speak of the cause and function of the encounter. We need go no further. If the same two individuals meet in future only to repeat the initial encounter step by step, we should go no further. Although, we may be able to predict who will win the contest based on our past observation, if the contestants repeat the same sequence, there has been no change and they have established no relationships or expectations of outcomes.

It is only in the curious cases where a contestant seems to anticipate the eventual outcome of the contest and short circuits the sequence to go to terminating responses resolving the contest that we are justified in saying that something new has been added to winner and loser. It is this relationship which we call dominance. It appears as if it is recognized by participant as well as observer and allows both of us to predict outcomes at the onset. Now we have a relationship worth examining. Now we can ask how it becomes established, what functions does it serve, what are the relevant ontogenetic and evolutionary factors, and most importantly, how do we measure it. Now we can search for correlates.

We may note that individuals need not engage in combat to establish dominance relationships on first encounters, they may use size, appearance, and behavioral patterns as predictors of outcomes. They may also use social skills to enlist aid in establishing or changing relationships and they may learn the relationship slowly, after repeated encounters in multiple contexts. Where a group is involved, the relationships may be nontransitive and hence not linear, but where we are dealing with socially skillful individuals capable of alliance formation, stability will probably bring with it near linearity.

Now, if we agree that the concept is useful, let us guard the definition, carefully separating correlate, function and cause, for if we broaden it excessively, the concept will lose its utility. Dominance: a relationship between individuals which influences agonistic interactions in that the participants may go directly to terminal responses in the sequence without the necessity of repeating all the usual steps in the contest. Functional outcomes may come quickly and multiple causes may be identified. We may label some causes competition and may label some functions as priority, but neither of these is necessary and/or sufficient to define the structure of the relationship. Will this relationship apply to your study and will it allow you to predict anything as a consequence of its application?

Difficulties Arising from the
Common Language Origin of a Technical Term
Gail Zivin
Annenberg School of Communications
University of Pennsylvania

My contribution to this forum is on the basis of having recently reviewed the use of "dominance" in studies of children (which will appear as a chapter in Omark, Freedman and Strayer book that is in preparation, Zivin & Hottenstein, in preparation). The process of reviewing those works made me rather skeptical of the value of the use of the term "dominance." I would like to share here the sources of my skepticism and three underlying definitional assumptions which characterize, in varying combinations and degrees, the typical uses of the term. (For categorization of each of the child dominance studies in terms of its use of these assumptions, you are referred to that chapter.) Although they are related problems I leave to other forum participants the topics of variability in the use of "dominance" and the contextual variation in dominance behaviors in studies of non-human primates and human adults.

The basis of my skepticism is the apparent lack of construct validity in the use of "dominance." The label is applied to a multiplicity of operationalizations in different studies even when similar substantive definitions are assumed. Rarely does a researcher attempt to correlate various operationalizations of "dominance." I found only three that do this--all done within the past two years (Savin-Williams, 1976; Sluckin & Smith, 1977; Vaughn & Waters, 1977). The first two studies show weak but significant correlations among sociometric ratings of status or toughness with frequency of initiations of acts that are traditionally considered agonistic. The last correlates sociometric ratings and frequency of a facial gesture that predicts win of conflicts. If readers know of other studies of children (or of adults) that attempt construct validity, I would appreciate being notified of them.

Beyond tests of whether different operationalizations correlate, researchers seem to give little attention to whether they are invoking the same underlying substantive definition as have been used by the other researchers whose works they cite. It goes without saying

that the divisions between the many dissimilar substantive definitions do not parallel the divisions between the even more various operationalizations; the multiplicities of operational and substantive definitions do not correspond with one--or a set of--operationalizations being used consistently and/or exclusively for one--or a set of--substantive definitions.

There are, at least to my eye, three assumptions or aspects which tend to be implicit in the rarely stated substantive definitions of "dominance." One substantive definition use may combine any of these three aspects or use only one. It is true that among researchers of a strongly ethological orientation the first of the three aspects is usually the one emphasized. However this impression is gleaned more from these researchers' relatively consistent choice of an operationalization that directly measures social structure rather than from the more slippery reasoning that typically appears in discussion sections.

The easy but nonnecessary association between these aspects is obvious as soon as they are presented: The social structure aspect (referring to a group structure induced from rankings based on frequency and/or direction of agonistic acts or from ratings of group members on a behavior tendency relevant to group structure), the trait aspect (referring to inferred personality properties of individuals who would be assumed to fall high or low in the status structure), and the demeanor aspect (referring to an individual's self-presentation behaviors such that one might be tempted to guess that an individual possesses a certain status-relevant trait or a certain rank in the social structure). Surely other underlying substantive aspects might be found by other reviewers with different sensitivities, but what seems of importance here is the likelihood of the common language, Western mythic basis of these aspects and of the easy nonnecessary association between them.

Said another way, the origin of the validity problem is that there is no theory of dominance; there is only the phenomenon (more accurately, the phenomena) of dominance. The recognition of instances of the "phenomenon" thus depends as much on the Western

myths that surround the use of the term "dominance" and on our man-in-the-street psychology (that suggests that one has a slot in a status structure by virtue of traits which are in turn revealed by one's demeanor) as it does on previous researcher's substantive or operational definitions. It depends not at all on a "theory" of dominance that might explicitly link a definition of dominance with definitions or values of other variables.

There may even be resistance to refining a clear theoretical context for "dominance" as one attempt that I know of to link "dominance" to an explicit range of a variable's values led to a split in the use of the term rather than a field-wide refinement: it was hypothesized that the deference shown to an alpha animal should not vary with context; when variability was found, some researchers ignored the implication that "dominance" should be context specific while other researchers moved to the term "control animal" in attempting to get free of the old concepts related to the term "dominance."

If we researchers cannot use and refine "dominance" by the guidelines we easily apply to the technical terms that do not have such common language and mythic roots, how are we to make more precise and informative our findings on "dominance?" If we cannot, I suggest that we stop using the term and begin to label the social structure phenomena that presently bear the terms by words that refer to the operationalizations of the phenomena.

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On Dominance Hierarchies
George A. Middendorf
Department of Zoology
University of Tennessee

The social behavior of a species may be a function either individuals or populations of individuals. If we define the social structure of the population as the method of organization of individuals, we generally observe one of several basic structures-personal space, territoriality, dominance hierarchy, social aggregation. Depending upon the scientist's viewpoint, each of these classes of social structure has been variously defined, usually qualitatively. Our concern here is to suggest a means by which these different definitions might be resolved, using dominance hierarchy as an example.

The concept of dominance hierarchy has long been used in the behavioral sciences, first appearing in the early 1800's. However, until the 1920's and 30's with the work of Allee, Collias, and others, the concept remained little investigated. Studies of dominance have, since that time, proliferated to such an extent that its uses and definitions vary extensively. A very cursory survey of the recent literature indicates that many different types of dominance hierarchy have been described: absolute, relative, network, circular, triangular, long- and short-chained, and others. With such a proliferation and fractionation has come a dilution of the central concept. Where one could formally speak of "dominance hierarchy per se" one must now specify which type, inevitably leading to a diminution of the original concept.

The behavioral sciences seem especially susceptible to these problems of definition and application. Given the relative flexibility of behavioral systems, one expects many different forms of adaptations to similar environmental and genetic constraints. Each phenotype of a species population is expected to solve its behavioral problems in a unique manner, corresponding to its

particular ontogeny and phylogeny. Additionally, the plasticity inherent in many behavioral systems allows individuals to modify their behavioral repertoire in response to such alterations in the environment. These alterations in social structure have been recognized almost as long as the definitions themselves (see for instance the early work of L.T. Evans and H.H. Shoemaker). Indeed, the fractioning of the original concept of dominance hierarchy into the many sub-classes is due to recognition of the variability of social structure within populations over time as well as of those terms which emphasize differences rather than similarities.

Mathematical analysis of hierarchial structures have been completed by both Landau and Chase (see Wilson, 1976, for a brief discussion). They both conclude that the particular structure of a hierarchy cannot be predicted, even if the attributes used for prediction are usually highly correlated with the final structure. Chase's suggestion that fortuitous events play an important role further complicates matters.

While we may never reach the stage of predicting the explicit form of the dominance hierarchy, recent research indicates that we may be able to predict the type of social structure exhibited under a specific set of circumstances. This research concerns the basic classes of structures mentioned above (e.g. personal space, etc.) and the transitions occurring among them. Focusing on environmental variables as determinants of social structure, this method approaches the reasons for the choice of structure, rather than examining the structure itself. Two governing factors of social structure appear to be 1) the quality and quantity of available resources, and 2) the methods by which these resources are obtained. Temporal changes in social structure associated with these parameters allow changes in population density (Crowcroft, 1955; Davis, 1958, 1959; Hunsaker and Burrage, 1965) resulting in the maximization of reproductive effort (Tinkle, 1969) and resource utilization (Kiestner and Slatkin, 1974; Carpenter and MacMillen, 1976; Middendorf and Post, submitted). The mechanisms by which these alterations occur are, as yet, unknown. However, several researchers suggest that these changes are energy-based

(Gill and Wolf, 1975; Campanella and Wolf, 1974; Carpenter and MacMillen, 1976; Middendorf and Post, submitted).

These efforts have centered on the major social structures and no attempt has been made to distinguish among any sub-classes of these systems. Although various sub-classes have been extensively used in the literature, environmental data requisite to analyses similar to those mentioned above are not available. When such data becomes available we may then begin to assemble the varied kinds of dominance hierarchies into a group of less-ambiguous terms which are satisfactory and to observe meaningful relationships between the sub-classes. What must be done at this stage is to delineate the possible environmental variables influencing dominance structure. An examination must be made of why one type of hierarchy was observed rather than another. Manipulation of variables thought to be influential should then be made, using controlled experimental procedures. For instance, investigations of the influence of access to a resource, hormonal levels, ontogenetic factors, reproductive status, etc. are in order. Such types of research are already being conducted. We must concentrate our efforts in a framework of this kind and continue to go beyond the "descriptive" stage. Quantitative experimentation is necessary, rather than qualitative description.

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The Analysis of Authority Structure
Carol Barner-Barry
Dept. of Government
Lehigh University

[Editor's note: This is a short summary of some of Dr. Barry's comments which appeared in a paper entitled, The Use of a Hierarchical Dominance Model in the Analysis of Authority Structure. Paper presented at the annual meetings of the American Political Science Association, Sept. 1977]

Because dominance and submission (treated as a dichotomous variable) has proved to be a useful variable in animal research, human ethologists have tended to analyze human behavior relevant to the study of authority and power in terms of dominance. Consequently, human ethology has yielded information that seems more relevant to theories about power than to theories about authority.

When one is considering the entire complex behavior system of a group of human children, the most useful way of separating authority from power seems to be to impose some standard for legitimacy. Where the standard is met, the behavioral interaction is classified as one involving power. Such a distinction results in the classification of most agonistic interactions as power interactions. However, once the focus is broadened to include nonagonistic behavior

in which individual A induces individual B to do what individual A wants B to do, a range of behavior which is much more rich and diverse than that afforded by studies of agonism is opened to exploration. And, it is more relevant to the complexity of political behavior.

Since the human ethologist's studies of dominance hierarchies are, either wholly or in part based on agonistic encounters, and since they quite consistently find very hierarchical dominance structures, the question arises of whether the authority structure in similar groups would be equally hierarchical.

In a field study of children in a Kindergarten-nursery school setting three factors were taken into consideration in the determination of authoritativeness. One was the frequency of attempts at authoritative behavior. Another was the proportion of successes. The final factor was the number of children over whom a given child had been authoritative.

Whether or not a dyad had an authoritative relationship (AR) was determined by counting the number of successes each member of the dyad had scored in relation to the other member and scoring as authoritative for that dyad the child who had more. In cases where there were ties the dyad was judged to have a mutual relationship (MR). From this data, a square matrix was constructed. In order to explore the effect of increasing "eliteness" on the linearity of the authority structure, the matrix was progressively decomposed into three successively smaller matrices by taking the upper left quadrant of each matrix to form a submatrix. The percent of linearity in each submatrix was then analyzed. What this analysis of successively smaller matrices seemed to indicate was that while the authority structure is quite linear for the group as a whole, there was a slight tendency toward less linearity among the children who occupy positions in the upper mid-portion of the authority structure. However, at the very top or "elite" level, the high linearity reasserted itself.

The overall levels and patterns of linearity and rigidity suggest that the children who are close to, but not in, the most elite group seem to be those who are most apt to jockey for position and test the limits of their ability to be authoritative over children who are relatively close to them in the authority structure. In contrast, the most authoritative children especially the top three, attempted authoritative behavior substantially more often than any of the others and attempted it with a much wider range of children. However, they tended to avoid each other most of the time and direct authoritative confrontations between any two of the top three were quite rare, considering their overall activity level in this area.

The findings with regard to the hierarchical nature of this authority structure parallel the findings of human ethologists on dominance structures. Both show a high level of linearity and rigidity in the structure of dyadic relationships. The patterns differ somewhat. The results reported in this paper point to the need for more work which explores the problems of empirically defining and studying authority and power comparatively. That is, they should be differentiated operationally and then studied with reference to each other.

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MARCH FORUM

At the editor's request, Joan Lockard, (Dept. of Neurological Surgery, University of Washington, Seattle, 98195) will edit the March Forum of this newsletter. The topic will be "The Adaptive Significance of Self-Deception." Authors should address themselves to the question of whether or not there are some forms of homind self-deception upon which natural selection has operated. In other words, whether self-deception has been an evolutionary mechanism, and if so, what possible functions it has served and to what extent it is quantifiable. Dr. Lockard asks that interested colleagues submit papers (typed) to her by the last week in February discussing their views and whatever data they may have on the subject for incorporation into the forum.

FUTURE MEETINGS

At the recent AAA convention Thomas Sebeok expressed an interest in having the Society for Human Ethology meet with the Semiotic Society at its annual meeting in October of 1979. The meeting will be at Indiana University, Bloomington, In. Dorm facilities and meal programs will be available to participants.

To date, all of our meetings have been held in conjunction with Animal Behavior Society, a stimulating and often enlightening arrangement. However, we always have the option of changing that relationship or of encouraging twice yearly meetings. If you have any opinions about this please pass them along to Larry Stettner, Dept. of Psychology, Wayne State University, Detroit, Michigan 48202.

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ANNUAL MEETING: ANIMAL BEHAVIOR SOCIETY

The Animal Behavior Society meeting will be held at the University of Washington in Seattle June 19-23; it promises to be a highly stimulating meeting. A brief glance at the list of guest speakers and symposium abstracts will persuade everyone to make the westward trek. I should also like to point out that, at this point, it is the only meeting where you can be assured of the convivial company of a large number of human ethologists.

A general outline of the schedule for the meeting will be to have one or more panelists speak on Monday, Tuesday, and Thursday. There will be a social hour for all persons interested in human ethology following the talk on Tuesday evening. Wednesday evening will be the annual banquets and presentation of films. There will be a business meeting for the Society for Human Ethology. Forms for the submission of abstracts are at the end of the newsletter.

ABS Guest Speakers:

Richard D. Alexander (Michigan)
Richard Dawkins (Oxford)
William D. Hamilton (Michigan)
Robert L. Trivers (Harvard)

Guest Panel Topic:

Mechanisms of Natural Selection

The importance to Animal Behavior of biological theories of the last 15 years on the mechanisms of natural selection prompted the coordination of the present panel. In an attempt to communicate to many colleagues and students of behavior the scientific fruitfulness of these endeavors, each guest speaker will present some of his recent research and ideas. The subject matter to be covered collectively will touch upon several of the following concepts: kin selection, inclusive fitness, reciprocal altruism, sexual selection, parental manipulation, parent-offspring conflict, deceit including self-deception and evolutionary stable strategies. A discussion period incorporating questions from the audience will follow the formal presentations.

Symposium: Social Behavior on Islands

Robert A. Wallace, Dept. of Zoology,
Duke University, Durham, N.C. 27706

Islands have been called natural biological laboratories--places where one can find numerous experiments in progress at any time. These experiments have rarely been of human design but it is no matter. We are free to make certain assumptions about the nature of the experiment and then to monitor the results. These results have often provided us with improved insight about the puzzling nature of natural selection. Some of us have been particularly interested in just how the peculiar competitive milieu on islands might influence social patterns of island dwellers, and out of this has grown the present symposium.

The discussants, citing from studies on a wide variety of organisms--from arthropods to wild horses--will address themselves to the central questions of what selective pressures are operating on islands and what their peculiar demands and opportunities tell us about the ecology and evolution of animal behavior. The symposium will be capped by a keynote address by Peter Klopfer and a period of open discussion.

Symposium: Mechanisms of Foraging Behavior
Alan C. Kamil, Dept. of Psychology,
University of Massachusetts, Amherst

The primary purpose of the proposed symposium will be to foster cross-disciplinary communication about foraging behavior. Research in this area often raises issues which cut across traditional disciplinary boundaries. For example, many ecological theories of optimal foraging make predictions about how systematic foraging behavior can affect foraging efficiency; studies of the relationship between prey density and predation suggest that place learning (patch selection) and/or perceptual-attentional phenomena (specific search images) are important in some predator-prey systems; laboratory and field studies have looked at how animals select their diets, choosing foods which contain needed nutrients and avoiding harmful foods. Thus, a laboratory experiment studying how animals learn to deal with a systematic distribution of food can have implications for field studies and optimal foraging theories. Information from field studies which look at naturally occurring food distributions may lead to better informed laboratory studies and suggest new types of research. A great deal could be gained if ecologists, ethologists and psychologists were more aware of the techniques, data and theories the other disciplines are using in the study of foraging behavior.

Symposium: Behavioral Expressions of
Biological Rhythms

Werner Loher, Dept. of Entomological
Sciences, University of California,
Berkeley

This symposium is the first of its kind, in which biological rhythms as related to behavior will be presented to a behavioral society, and it is hoped that this subdiscipline will become a permanent part of its curriculum. The objectives of the symposium are:

(1) To demonstrate the existence of circadian, tidal and circannual rhythms in animal behavior as an adaptation to daily, monthly, and seasonal periodicities of the environment.

(2) To discuss the functions of biological rhythms in behaviors as diverse as molting, locomotion, feeding, and reproduction. The internal clock-mechanism releases and terminates behavior patterns at a time when their display fits the needs of the organism best in view of the environmental conditions. It provides the animal with a time-schedule according to which compatible behavior patterns are released together or in an interconnected sequence, whereas antagonistic behaviors are spaced out to the extent that they cannot interfere with one another in their performance. This temporal sequencing of often diverse behaviors may occur within a single animal or between two or more individuals in a social setting.

(3) To discuss the anatomical and physiological basis of the rhythmical expression of behavior.

Informal Session:

An informal session on Methodology is being planned for the 1978 Annual Meeting of the Animal Behavior Society. Some issues for discussion are technological hardware and software, adequacy and appropriate use of current methods, adequacy of current behavioral definitions, and statistical techniques. Individuals interested in participating in an informal evening session, please contact:

M.S. Cummins, Ph.D.
Assistant Professor
Department of Psychology
Stewart Biological Sciences Bldg.
McGill University
1205 McGregor Avenue
Montreal, PQ, Canada H3A 1B1

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JOB ANNOUNCEMENT

One faculty position in developmental psychology is available at the Institute of Child Development, University of Minnesota, beginning September, 1978. The position is at the level of beginning assistant professor. Candidates should have interdisciplinary interests and competence in the biological basis of behavioral development with an appropriate doctoral degree. Examples of specialization within these approaches include family and group

relations, comparative/cross-cultural socialization and cognitive/perceptual development, neurophysiological development, hormones/nutrition and behavior. Teaching responsibilities include introductory courses. Interested persons should send copies of their curriculum vitae and three letters of recommendation to Professor Tom Trabasso, Institute of Child Development, 51 East River Road, University of Minnesota, Minneapolis, Minnesota 55455. Completed applications must be received by 15 March 1978 for adequate consideration. Salaries at the University of Minnesota are competitive, and the University of Minnesota is an equal opportunity/affirmative action employer.

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GRADUATE STUDY IN ANIMAL PHYSIOLOGY AND BEHAVIOR AT THE UNIVERSITY OF COLORADO AT BOULDER

The Department of Environmental, Population, and Organismic Biology welcomes applications for graduate study leading to a Master of Arts or Doctor of Philosophy in areas related to Animal Physiology and Behavior.

The Department of EPO Biology is housed in three buildings on the main campus at Boulder. Cooperative interactions with the Institute for Behavioral Genetics and the Institute of Arctic and Alpine Research allow additional facilities for graduate work. A large, new computing facility, scanning electron microscopes, and electron microscopes are also available for graduate use. Graduate students are urged to begin research early in their program of study.

Areas available for field research are terrestrial and aquatic habitats from 5,000 to 14,000 feet including extensive areas of tundra, coniferous forests, grasslands, and semideserts.

Applications for the fall semester should be made as early as possible and must be received complete by January 15.

Preliminary application materials and further information on programs and financial aid can be obtained from the Graduate Secretary, Department of EPO Biology, University of Colorado at Boulder, Boulder, Colorado 80309.

ANIMAL BEHAVIOR SOCIETY
ANNUAL MEETING
June 19-23, 1978
UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON

1. Title of Paper: _____

2. Author(2):

First Name	Initial	Last Name	Institutional Affiliation
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_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

3. Mailing address of the presenting author:

Telephone Number:

() _____

4. ABS Membership:

Status of senior author:

_____ A regular member of ABS

_____ A student member of ABS

_____ A non-member who is a joint author with a member

_____ A non-member whose paper is introduced by _____

If multiple authors, please list those who are members of the Society.

5. Category of paper to be presented (abstract required for all types).

_____ 20-minute paper (includes discussion time)

_____ 10-minute paper (includes discussion time)

_____ Poster paper

6. Identify your paper according to animal group and principal subject category
(To be used by program officer in organizing and scheduling papers).

Animal Group (circle principal animal subjects)

Humans

Non-human primates

Birds

Herps

Fishes

Crustaceans

Insects

Arachnids

Molluscs

Other Invertebrates

Self-Maintenance Activities		
Locomotion-exploration	Grooming	Ingestive/Eliminative
Approach-avoidance	Tonic immobility	Other _____
Biological Rhythms		
Lunar	Circadian	Other _____
Physiology		
Endocrine	Neural	Sensory
Development		
Early experience	Maturation	Imprinting
Play	Endocrine effects	Other social responses
Learning		
Conditioning	Habituation	Other _____
Genetics and Evolution		
Single gene effects	Selection	Domestication
Behavior and morphology	Geographic variation	Evolutionary models
Isolating mechanisms	Behavioral taxonomy	Other _____
Orientation		
Homing	Migration	Navigation
Echolocation	Taxes	Sensory basis
Communication		
Visual	Acoustic	Chemical
Tactual	Stimulus filtering	Other _____
Social		
Parent-offspring	Sex selection	Courtship and mating
Agonistic behavior	Dominance	Territoriality
Altruism/Kinship	Group structure, spacing, schooling	Ecological determinants
Ecological		
Habitat selection	Predator-prey interactions	Symbiotic relations
Competition	Density regulation	Physical environment effects on behavior
Applied		
Drugs	Effects of pollutants	Husbandry
Other _____		

Teaching Animal Behavior

None of the above categories is appropriate. I would categorize my paper as dealing with _____

7. Visual aids. A projector for 2 x 2 slides will be available; with advanced notice 3 1/4 x 4 slides could be accommodated.
 Do you wish to use 3 1/4 or 4 slides? _____
 Do you need a 16 mm projector? _____
 Other visual aids equipment needed. _____

INSTRUCTIONS FOR PREPARING ABSTRACT

Abstracts should be typed in a 3 x 7 inch space. The entire abstract, including title, author(s), institutional affiliation(s), text and acknowledgements must be typed within the rectangle. Single space all typing, leaving no top or left margins. Use black ink for Greek letters and symbols not on your typewriter.

Abstracts will be photographed just as you submit them, so please follow the suggested format. Use an electric typewriter, if possible, with a good ribbon and make neat corrections. Elite type is preferred. Practice typing the abstract in a 3 x 7 inch rectangle. The lines will be cut away prior to reproduction.

Please send the ORIGINAL + ONE COPY of your abstract to the Program Officer along with the Transmittal Form.

Your abstract should be organized as follows:

1. A sentence stating the specific objective(s) of the study unless indicated by the title.
2. A brief description of methods, if pertinent.
3. A summary of the results obtained.
4. A statement of conclusions.

Send abstracts to:

Dr. Joan Lockard, Program Officer
Animal Behavior Society
RR 744 Health Sciences Bldg.
University of Washington RI-20
Seattle, Washington 98195

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